

Application Serial No.: 10/625,657
Reply to Office Action dated August 23, 2004

REMARKS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1-4 are presently active in this case, Claim 1 having been amended and Claim 5 having been canceled without prejudice or disclaimer by way of the present Amendment.

In the outstanding Official Action, the abstract of the disclosure was objected to because of minor informalities. Accordingly, a new Abstract of the Disclosure has been added in place of the original abstract. Accordingly, the Applicants request the withdrawal of the objection to the abstract.

Claims 1-3 were rejected under 35 U.S.C. 102(e) as being anticipated by Gross et al. (U.S. Patent No. 6,547,849). Claim 4 was rejected under 35 U.S.C. 103(a) as being unpatentable over Gross et al. in view of Baum (U.S. Patent No. 4,140,170). For the reasons discussed below, the Applicants request the withdrawal of the art rejections.

In the Office Action, the Gross et al. reference is indicated as anticipating Claim 1. However, the Applicants note that a claim is anticipated only if each and every element as set forth in the claims is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). As will be demonstrated below, the Gross et al. reference clearly does not meet each and every limitation of the independent Claim 1.

Claim 1 of the present application recites a casting apparatus comprising a die which has an opening section above the die so as to pour a molten metal therefrom, a heater which is disposed above the die, a gas supplying section which supplies an inert gas to a surface of

the molten metal, a lid which is disposed between the surface of the molten liquid and an entirety of the heater during operation of the heater, and a lid moving structure which moves the lid relatively to the die and controls an opening amount of the opening section above the die. The Applicants submit that the Gross et al. reference fails to disclose all of the limitations recited in Claim 1 of the present application.

The Gross et al. reference describes a steel charge and slag forming material that is heated and refined in a ladle (17) using a ladle metallurgical furnace (10) to form a molten steel bath covered by slag. The steel charge or bath is heated within the ladle (17) by an electrode (38), which is supported by a conducting arm (36) and an electrode column (39). In operation, as column (39) lowers, electrode (38) is lowered through an aperture in the furnace hood or exhaust (34) and an aperture in the furnace lid (32) into the ladle (17) and beneath the slag in order to heat the metal within the ladle (17). A stirring lance (48) is movably mounted on lance support column (46) via support arm (47). An inert gas is bubbled through stir lance (48) in order to stir or circulate the bath to achieve a homogeneous temperature and composition and to cause deoxidation and desulphurization of the steel.

Claim 1 of the present application recites a lid which is disposed between the surface of the molten liquid and an entirety of the heater during operation of the heater. Such a configuration is not disclosed or suggested by the Gross et al. reference. As noted above, the Gross et al. reference describes a configuration in which, in operation, electrode (38) is lowered through an aperture in the furnace lid (32) into the ladle (17) and beneath the slag in order to heat the metal within the ladle (17). Thus, the lid (32) is not disposed between the liquid and the electrode (38) during operation of the electrode (38).

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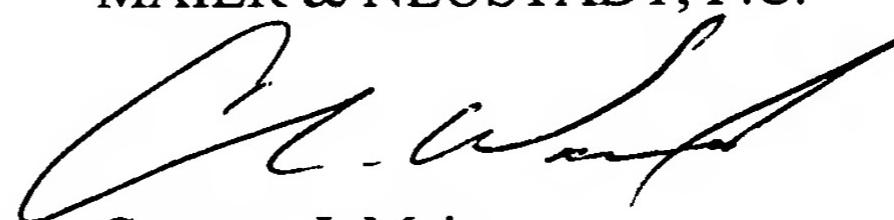
Accordingly, since the Gross et al. reference does not disclose all of the limitations recited in Claim 1, the Applicants respectfully request the withdrawal of the anticipation rejection of Claim 1.

Claims 2-4 are considered allowable for the reasons advanced for Claim 1 from which they depend. These claims are further considered allowable as they recite other features of the invention that are neither disclosed, taught, nor suggested by the applied references when those features are considered within the context of Claim 1.

Consequently, in view of the above discussion, it is respectfully submitted that the present application is in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully Submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Registration No. 25,599
Attorney of Record

Christopher D. Ward
Registration No. 41,367

Customer Number

22850

Tel. (703) 413-3000
Fax. (703) 413-2220
(OSMMN 10/01)

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